Recall Bulletin

File In Section: Product Recalls
Bulletin No.: 03062
Date: January 2004

PRODUCT SAFETY RECALL

SUBJECT: POWER STEERING GEAR LOWER PINION BEARING SEPARATION

MODELS: 1996 - 1998 BUICK REGAL
1997 - 1998 CHEVROLET LUMINA, MALIBU, MONTE CARLO
1997 - 1998 OLDSMOBILE CUTLASS
1996 - 1997 OLDSMOBILE CUTLASS SUPREME
1998 OLDSMOBILE INTRIGUE
1996 PONTIAC GRAND PRIX

CONDITION

General Motors has decided that a defect, which relates to motor vehicle safety, exists in **certain** 1996-1998 Buick Regal; 1997-1998 Chevrolet Lumina, Malibu, and Monte Carlo; 1997-1998 Oldsmobile Cutlass; 1996-1997 Oldsmobile Cutlass Supreme; 1998 Oldsmobile Intrigue; and 1996 Pontiac Grand Prix vehicles. Some of these vehicles have a condition where the lower pinion bearing in the power steering gear may separate. Most reports indicate the driver experienced an intermittent loss of power steering assist when making left turns, usually at low speeds. Power assist is normal in right hand turns. When trying to turn left, some drivers could experience higher resistance or, in a few cases, assist towards the right. If this happens while the vehicle is moving, a crash could result.

CORRECTION

Dealers are to inspect the condition of the lower pinion bearing and replace the lower pinion bearing, or in a few cases, replace the rack and pinion steering gear assembly.

VEHICLES INVOLVED

Involved are **certain** 1996-1998 Buick Regal; 1997-1998 Chevrolet Lumina, Malibu, and Monte Carlo; 1997-1998 Oldsmobile Cutlass; 1996-1997 Oldsmobile Cutlass Supreme; 1998 Oldsmobile Intrigue; and 1996 Pontiac Grand Prix vehicles built within these VIN breakpoints:

YEAR	DIVISION	MODEL	FROM	THROUGH
1996	Buick	Regal	T1442456	T1524713
1997	Buick	Regal	V1400018	V1482825
1998	Buick	Regal	W1400002	W1462380
1997	Chevrolet	Lumina	V1100001	V1193101
			V9100003	V9343264

VEHICLES INVOLVED, Cont'd.

YEAR	DIVISION	MODEL	FROM	THROUGH
1998	Chevrolet	Lumina	W1100001	W1111128
			W9100001	W9177423
1997	Chevrolet	Malibu	V6100001	V6170697
			VY100001	VY151676
1998	Chevrolet	Malibu	W6100001	W6150603
			WY100001	WY138010
1997	Chevrolet	Monte Carlo	V9100001	V9343265
1998	Chevrolet	Monte Carlo	W9100003	W9177262
1997	Oldsmobile	Cutlass	V6300001	V6318123
1998	Oldsmobile	Cutlass	W6300001	W6315881
1996	Oldsmobile	Cutlass Supreme	TF329637	TF379598
1997	Oldsmobile	Cutlass Supreme	VF300001	VF359543
1998	Oldsmobile	Intrigue	WF300001	WF333174
1996	Pontiac	Grand Prix	TF239304	TF273375

IMPORTANT: Dealers should confirm vehicle eligibility through ***GMVIS*** (GM Vehicle Inquiry System) prior to beginning recall repairs. [Not all vehicles within the above breakpoints may be involved.]

For U.S.: For dealers with involved vehicles, a Campaign Initiation Detail Report containing the complete Vehicle Identification Number, customer name and address data has been prepared and will be loaded to the GM DealerWorld, Recall Information website. The customer name and address data furnished will enable dealers to follow up with customers involved in this recall.

For Canada & IPC: Computer listings containing the complete Vehicle Identification Number, customer name and address data of involved vehicles have been prepared, and are being furnished to involved dealers. The customer name and address data will enable dealers to follow up with customers involved in this recall. Any dealer not receiving a computer listing with the recall bulletin has no involved vehicles currently assigned.

These dealer listings may contain customer names and addresses obtained from Motor Vehicle Registration Records. The use of such motor vehicle registration data for any other purpose is a violation of law in several provinces. Accordingly, you are urged to limit the use of this listing to the follow-up necessary to complete this recall.

PARTS INFORMATION

Parts Pre-Ship Information – For US and Canada

Important: An initial supply of steering gear pinion bearing kits required to complete this program will be pre-shipped to involved dealers of record. This pre-shipment is scheduled to begin the week of January 19, 2004 and will be approximately 20% of each dealer's involved vehicles. Pre-shipped parts will be charged to dealer's open parts account.

Additional parts, if required, are to be obtained from General Motors Service Parts Operations (GMSPO). Please refer to your "Involved vehicles listing" before ordering parts. Normal orders should be placed on a DRO = Daily Replenishment Order. In an emergency situation, parts should be ordered on a CSO = Customer Special Order.

Part Number	Description	Quantity/Vehicle
88880036	Bearing Kit, S/Gr Pinion	1

SPECIAL TOOL

During the week of January 19, 2004, dealers who did not have vehicles involved in recall 02049, will be shipped a Pinion Bearing Replacer, J 44714-B, for use in this recall. All other dealers were shipped this tool in December 2002, for use in recall 02049. This tool is being furnished at no charge. Additional tools, if required, may be purchased by contacting SPX Kent-Moore at 1-800-GM-TOOLS (1-800-468-6657).

SERVICE PROCEDURE

Steering Gear Inspection for Involvement

If a vehicle has had the power steering gear lower pinion bearing or steering gear replaced with a remanufactured GM steering gear assembly obtained from GMSPO or AC Delco prior to this recall, the applicable service procedure below will still need to be performed on the vehicle.

If a vehicle has had the power steering gear lower pinion bearing or steering gear replaced with a non-GM design (aftermarket) steering gear, DO NOT perform this recall. Attempting to perform this recall on a non-GM design steering gear may void the manufacturer's warranty given to the customer at the time of the purchase.

1. Inspect the steering gear housing for one of the GM design steering gear identifiers listed below.
   - A label on the housing indicating that the gear was remanufactured for GM or AC Delco.
   - An 8-digit casting or part number stamped in the rear side of the aluminum housing above or near the left mounting hole.
   - An "S" type logo in the aluminum housing.
2. If the steering gear housing has one of the identifiers listed above, the recall must be performed. Proceed to the appropriate procedure.
3. If the steering gear housing DOES NOT have one of the identifiers listed above, ensure that the steering gear is a non-GM design by contacting the customer and inquiring about where the vehicle was previously repaired. If the customer indicates that the subject steering gear was installed by a non-GM dealer, advise the customer that the recall does

not apply, and if necessary, refer the customer to the Customer Assistance Center for reimbursement.

1996 Buick Regal
1997-1998 Chevrolet Lumina, Monte Carlo
1996-1997 Oldsmobile Cutlass Supreme
1996 Pontiac Grand Prix

Lower Pinion Bearing Inspection

The following service procedure is for inspection of the lower pinion bearing and can be performed without completely removing the steering gear from the vehicle.

Tools Required
- J 44714-B Pinion Bearing Remover
- J 24319-B Steering Linkage and Tie Rod Puller

1. Open the hood.
2. Raise the vehicle on a suitable hoist and support.
3. Remove the left front tire and wheel assembly.
4. Support the rear of the engine cradle and remove the two rear cradle attaching bolts.
5. Partially lower the rear of the engine cradle.
6. Remove the bolt and separate the intermediate steering shaft from the steering gear.
7. Lower the rear of the engine cradle as necessary to access and remove the steering gear attaching bolts.
8. On models equipped with a 3.4L engine, remove the two bolts that attach the heat shield that covers the right steering gear attaching bolt. Remove the heat shield.
9. Remove the two bolts that attach the steering gear to the engine cradle.
10. Remove the nut that attaches the outer left tie rod end to the steering knuckle.
11. Using J 24319-B, Steering Linkage and Tie Rod Puller, or equivalent, separate the outer left tie rod from the steering knuckle.
12. Remove the steering gear from the engine cradle mounting brackets and reposition to access the dust cap (3). Refer to Figure 1.

Important

When removing the dust cap in the next step, watch for loose ball bearings that may have separated from the inner and outer pinion bearing races.

13. Remove the dust cap (3) from the steering gear housing (2) and inspect for loose ball bearings. Refer to Figure 1.
    - If no ball bearings were found in the dust cap, proceed to the next step and replace the lower pinion bearing.
    - If one or more ball bearings were found loose in the dust cap, proceed to the section in this bulletin titled, "Steering Gear Replacement", for the described vehicle.
14. Reposition the steering gear as necessary to access the adjuster plug lock nut and the adjuster plug.

Notice

Failure to perform the next step may result in damage to the lower pinion bearing removal tool, J 44714-1.

15. Loosen the adjuster plug lock nut (3) and the adjuster plug (2). Refer to Figure 2. Do not remove the plug.

Notice

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

16. While holding the stub shaft (1), remove the retaining nut (4) from the pinion shaft. Refer to Figure 1. Do not reuse the nut.
17. Remove the lower retaining snap ring (1). Refer to Figure 3.

Important

The bearing retainer being removed in the next step is a small piece of wire that keeps all the ball bearings evenly spaced inside the bearing races.

18. Using a small "pick" like tool, remove the bearing retainer from the bearing. Refer to Figure 4.
19. After removing the bearing retainer, reposition the ball bearings into two groups of four. Refer to Figure 5.
20. Separate the 2-legged puller from the center nut on J 44714-B and insert the puller legs into the openings between the two groups of ball bearings.
21. With the forcing screw backed off, screw the center nut into the puller and tighten until the nut bottoms against the puller. Refer to Figure 6.
22. While holding the center nut with a wrench, tighten the forcing screw to remove the bearing from the housing. Refer to Figure 7.

Important

Inspect the gear housing to ensure that all pieces of the old bearing have been removed.

23. Apply a small quantity of lubrication (e.g., multi-purpose grease or power steering fluid) inside of the housing bore where the new bearing will be installed.
24. Center the new bearing over the pinion thread. The bearing can be installed with either side facing outwards.
25. Place the bearing installer (1) J 44714-2 (included in J 44714-B) over the pinion thread. Refer to Figure 8. If necessary, use the extension included with the installer. Lightly tap the bearing installer with a hammer until the bearing is seated in the housing.
26. Install a new snap ring. When properly installed, the large lug (1) on the snap ring must be on the right side as shown in Figure 9.

Important

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

27. While holding the stub shaft (1), install a new retaining nut (3) on the pinion shaft. Refer to Figure 10. **Tighten**

    Tighten nut to 30 N·m (22 lb ft).

28. With the rack centered in the housing, tighten the adjuster plug (2) to 10 N·m (88 lb in), and then back off 40 to 50 degrees. Refer to Figure 11. Check the torque on the pinion. Maximum pinion preload torque is 4 N·m (35 lb in).
29. Tighten the adjuster plug lock nut (3) firmly against the steering gear housing while holding the adjuster plug (2) stationary.
30. Install a new dust cap (2) to the steering gear housing.
31. Install the steering gear in the engine cradle mounting brackets.
32. Install the steering gear attaching bolts. **Tighten**

    Tighten bolts to 80 N·m (59 lb ft).

33. On models equipped with a 3.4L engine, install the heat shield and attaching bolts. **Tighten**

    Tighten bolts to 6 N·m (54 lb in).

34. Install the left outer tie rod end to the steering knuckle. On models with a torque prevailing nut, tighten the nut to 30 N·m (22 lb ft) and then tighten an additional 115 degrees. On models with a slotted nut and cotter pin, tighten the nut to 85 N·m (63 lb ft). If necessary, tighten the nut slightly in order to insert the cotter pin through the tie rod stud. Bend the cotter pin ends against the flats of the nuts.
35. Partially raise the rear of the engine cradle.
36. Connect the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

    Tighten the bolt to 48 N·m (35 lb ft).

37. Raise the rear of the engine cradle and install the rear attaching bolts. **Tighten**

    Tighten the bolts to 180 N·m (133 lb ft).

38. Install the left front tire and wheel assembly. **Tighten**

    Tighten the wheel nuts to 140 N·m (103 lb ft).

39. Lower the vehicle.
40. Check the power steering fluid level and add if necessary.
41. Check the alignment and set toe-in as necessary.
42. Close the hood.

1996 Buick Regal
1997-1998 Chevrolet Lumina, Monte Carlo
1996-1997 Oldsmobile Cutlass Supreme
1996 Pontiac Grand Prix

Steering Gear Replacement, If Required

For additional information on steering gear removal, refer to the Steering section in the appropriate Service Manual or SI.

Important

Steering gears currently available from GMSPO are verified good stock and do not require bearing inspection or replacement.

The following service procedure is based on certain steps having already been performed in the inspection procedure.

1. Remove the right front tire and wheel assembly.
2. Remove the nut that attaches the outer right tie rod end to the steering knuckle.
3. Using J 24319-B, or equivalent, separate the outer right tie rod end from the steering knuckle.
4. If equipped, disconnect the electrical connector from the switch on the steering gear.
5. Place the steering gear back inside of the mounting brackets on the engine cradle.
6. If equipped, release the strap that attaches the power steering fluid lines to the steering gear.
7. Loosen and disconnect both power steering fluid lines from the steering gear.
8. Remove the steering gear from the vehicle.
9. Remove the tie rod ends from the original steering gear.
10. Measure the position of the adjuster nuts on the old steering gear and adjust the new nuts on the new steering gear to the same measurement.
11. Install the tie rod ends on the new steering gear. **Tighten**

    Tighten the adjuster nuts to 68 N·m 50 lb ft).

12. If equipped, transfer the switch to the new steering gear.
13. Install the new steering gear in the engine cradle mounting brackets.
14. Install the steering gear attaching bolts. **Tighten**

    Tighten to 80 N·m (59 lb ft).

15. Connect the power steering fluid lines to the steering gear. **Tighten**

    Tighten to 27 N·m 20 lb ft).

16. If equipped, connect the electrical connector to the switch on the steering gear.
17. On models equipped with a 3.4L engine, install the heat shield and attaching bolts. **Tighten**

    Tighten to 6 N·m (53 lb in).

18. Install both outer tie rod ends to the steering knuckles. On models with torque prevailing nuts, tighten the nut to 30 N·m (22 lb ft) and then tighten an additional 115 degrees. On models with a slotted nut and cotter pin, tighten the nut to 85 N·m (63 lb ft). If necessary, tighten the nut slightly in order to insert the cotter pin through the tie rod stud. Bend the cotter pin ends against the flats of the nuts.
19. Partially raise the rear of the engine cradle.
20. Connect the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

    Tighten to 48 N·m (35 lb ft).

21. Raise the rear of the engine cradle and install the rear attaching bolts. **Tighten**

    Tighten to 180 N·m (133 lb ft)

22. Install both front tire and wheel assemblies. **Tighten**

    Tighten the wheel nuts to 140 N·m (103 lb ft).

23. Lower the vehicle.
24. Add power steering fluid and bleed the system.
25. Check the alignment and set toe-in as necessary.
26. Close the hood.

1997-1998 Chevrolet Malibu
1997-1998 Oldsmobile Cutlass

Lower Pinion Bearing Inspection

Because of limited access in this vehicle, the pinion bearing can only be inspected after the steering gear has been completely removed from the vehicle. For additional information on steering gear removal, refer to the Steering section in the appropriate Service Manual or SI.

Tools Required
- J 44714-B Pinion Bearing Remover
- J 24319-B Steering Linkage and Tie Rod Puller

1. Open the hood.
2. Raise the vehicle on a suitable hoist and support.
3. Remove both front tire and wheel assemblies.
4. Remove the nuts securing the outer tie rod ends to the steering knuckles.
5. Using J 24319-B, Steering Linkage and Tie Rod Puller, or equivalent, separate the outer tie rod ends from the steering knuckles.
6. Remove the one bolt and two nuts attaching the rear transmission mount to the engine cradle.
7. Support the rear of the engine cradle.
8. Remove the six bolts that attach the rear of the engine cradle to the body.
9. Partially lower the rear of the engine cradle.
10. Remove the bolt and separate the intermediate steering shaft from the steering gear.
11. Remove the stabilizer link bolts from both lower control arms.

12. Lower the rear of the engine cradle as necessary to access the steering gear attaching bolts.
13. Remove the two bolts attaching the steering gear to the engine cradle.
14. Loosen and disconnect both power steering fluid lines from the steering gear.
15. Remove the steering gear from the engine cradle mounting brackets.
16. Remove the steering gear from the vehicle.

Important

When removing the dust cap in the next step, watch for loose ball bearings that may have separated from the inner and outer pinion bearing races.

17. Remove the dust cap (3) from the steering gear housing (2) and inspect for loose ball bearings. Refer to Figure 1.
    - If no ball bearings were found in the dust cap, proceed to the next step and replace the lower pinion bearing.
    - If one or more ball bearings were found loose in the dust cap, proceed to the section in this bulletin titled, "Steering Gear Replacement", for the described vehicle.

Notice

Failure to perform the next step may result in damage to the lower pinion bearing removal tool J44714-1

18. Loosen the adjuster plug lock nut (3) and the adjuster plug (2). Refer to Figure 2. Do not remove the plug.

Notice

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

19. While holding the stub shaft (1), remove the retaining nut (4) from the pinion shaft. Refer to Figure 1. Do not reuse the nut.
20. Remove the lower retaining snap ring (1). Refer to Figure 3.

Important

The bearing retainer being removed in the next step is a small piece of wire that keeps all of the ball bearings evenly spaced inside the bearing races.

21. Using a small "pick" like tool, remove the bearing retainer from the bearing. Refer to Figure 4.
22. After removing the bearing retainer, reposition the ball bearings into two groups of four. Refer to Figure 5.
23. Separate the 2-legged puller from the center nut on J 44714-B and insert the puller legs into the openings between the two groups of ball bearings.
24. With the forcing screw backed off, screw the center nut into the puller. **Tighten**

Tighten the nut until it bottoms against the puller. Refer to Figure 6.

25. While holding the center nut with a wrench, tighten the forcing screw to remove the bearing from the housing. Refer to Figure 7.

Important

Inspect the gear housing to ensure that all pieces of the old bearing have been removed.

26. Apply a small quantity of lubrication (e.g., multi-purpose grease or power steering fluid) inside of the housing bore where the new bearing will be installed.
27. Center the new bearing over the pinion thread. The bearing can be installed with either side facing outwards.
28. Place the bearing installer (1), J 44714-2 (included in J 44714-B) over the pinion thread. Refer to Figure 8. Lightly tap the bearing installer with a hammer until the bearing is seated in the housing.
29. Install a new snap ring. When properly installed, the large lug (1) on the snap ring must be on the right side as shown in Figure 9.

Notice

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

30. While holding the stub shaft (1) install a new retaining nut (3) on the pinion shaft. Refer to Figure 10. **Tighten**

Tighten to 30 N·m (22 lb ft).

31. With the rack centered in the housing, tighten the adjuster plug (2) to 10 N·m (88 lb in), and then back off 40 to 50 degrees. Refer to Figure 11. Check the torque on the pinion. Maximum pinion preload torque is 4 N·m (35 lb in).
32. Tighten the adjuster plug lock nut (3) firmly against the steering gear housing while holding the adjuster plug (2) stationary.
33. Install a new dust cap (2) to the steering gear housing.
34. Install the steering gear in the engine cradle mounting brackets.
35. Install the two bolts attaching the steering gear to the engine cradle. **Tighten**

Tighten to 120 N·m (88 lb ft).

36. Connect the power steering fluid lines to the steering gear. **Tighten**

Tighten to 27 N·m 20 lb ft).

37. Partially raise the rear of the engine cradle.
38. Connect the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

Tighten to 22 N·m (16 lb ft).

39. Install the stabilizer link bolts in both lower control arms. **Tighten**

Tighten to 17 N·m (13 lb ft).

40. Raise the rear of the engine cradle and install the six bolts. Refer to Figure 12. **Tighten**

    Tighten the rear suspension crossmember bolts (1) to 110 N·m (81 lb ft).
    Tighten the suspension crossmember to body bolts (2) to 82 N·m (60 lb ft).

41. Install the one bolt and two nuts that attach the rear transmission mount to the engine cradle. **Tighten**

    Tighten to 66 N·m (49 lb ft).

42. Install both outer tie rod ends to the knuckles. **Tighten**

    Tighten the nuts to 45 N·m (33 lb ft).

43. Install both front tire and wheel assemblies. **Tighten**

    Tighten to 140 N·m (103 lb ft).

44. Lower the vehicle.
45. Check the power steering fluid level and add if necessary.
46. Check the alignment and set toe-in as necessary.
47. Close the hood.

1997-1998 Chevrolet Malibu
1997-1998 Oldsmobile Cutlass

Steering Gear Replacement, If Required

For additional information on steering gear removal, refer to the Steering section in the appropriate Service Manual or SI.

Important

Steering gears currently available from GMSPO are verified good stock and do not require bearing inspection or replacement.

The following service procedure is based on the steering gear having been removed from the vehicle during the inspection procedure.

1. Remove the tie rod ends from the original steering gear.
2. Measure the position of the adjuster nuts on the old steering gear and adjust the new nuts on the new steering gear to the same measurement.
3. Install the tie rod ends on the new steering gear. **Tighten**

   Tighten the adjuster nuts to 68 N·m (50 lb ft).

4. Install the new steering gear in the engine cradle mounting brackets.

5. Install the two bolts attaching the steering gear to the engine cradle. **Tighten**

   Tighten to 120 N·m (88 lb ft).

6. Connect the power steering fluid lines to the steering gear. **Tighten**

   Tighten to 27 N·m (20 lb ft).

7. Partially raise the rear of the engine cradle.
8. Connect the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

   Tighten to 22 N·m (16 lb ft).

9. Install the stabilizer link bolts in both lower control arms. **Tighten**

   Tighten to 17 N·m (13 lb ft).

10. Raise the rear of the engine cradle and install the six bolts. Refer to Figure 12. **Tighten**

    Tighten the rear suspension crossmember bolts (1) to 110 N·m (81 lb ft).
    Tighten the suspension crossmember to body bolts (2) to 82 N·m (60 lb ft).

11. Install the one bolt and two nuts that attach the rear transmission mount to the engine cradle. **Tighten**

    Tighten to 66 N·m (49 lb ft).

12. Install both outer tie rod ends to the knuckles. **Tighten**

    Tighten the nuts to 45 N·m (33 lb ft).

13. Install both front tire and wheel assemblies. **Tighten**

    Tighten to 140 N·m (103 lb ft).

14. Lower the vehicle.
15. Check the power steering fluid level and add if necessary.
16. Check the alignment and set toe-in as necessary.
17. Close the hood.
18. Add power steering fluid and bleed the system.
19. Check the alignment and set toe-in as necessary.
20. Close the hood.

1997-1998 Buick Regal
1998 Oldsmobile Intrigue

Lower Pinion Bearing Inspection

The following service procedure is for inspection of the lower pinion bearing and can be performed without completely removing the steering gear from the vehicle.

Tools Required
- J 44714-B Pinion Bearing Remover
- J24319-B Steering Linkage and Tie Rod Puller

1. Open the hood.
2. Raise the vehicle on a suitable hoist and support.

Important

When removing the dust cap in the next step, watch for loose ball bearings that may have separated from the inner and outer pinion bearing races.

3. Remove the dust cap (3) from the steering gear housing (2) and inspect for loose ball bearings, refer to Figure 1.
   - If no ball bearings were found in the dust cap, proceed to the next step and replace the lower pinion bearing.
   - If one or more ball bearings were found loose in the dust cap, proceed to the section titled, "Steering Gear Replacement", for the described vehicles.
4. Support the rear of the engine frame (cradle) and remove the two rear attaching bolts.
5. Remove the left and right side stabilizer bar links from the lower control arms.
6. Reposition the stabilizer bar as necessary to improve access to the steering gear.
7. Remove the two bolts that attach the steering gear to the engine cradle.
8. Remove the bolt and separate the intermediate steering shaft from the steering gear.
9. Lower the rear of the engine cradle as necessary to access the steering gear.
10. Remove the steering gear from the engine cradle mounting brackets and reposition to access the adjuster plug lock nut and the adjuster plug. Do not remove the plug.
11. Loosen the adjuster plug lock nut (3) and the adjuster plug (2). Refer to Figure 2. Do not remove the plug.

Important

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

12. While holding the stub shaft (1), remove the retaining nut (4) from the pinion shaft. Refer to Figure 1. Do not reuse the nut.
13. Remove the lower retaining snap ring (1). Refer to Figure 3.

Important

Placement of a block of wood between the steering gear housing and the transmission case will help to support the steering gear in the next step.

Important

The bearing retainer being removed in the next step is a small piece of wire that keeps all of the ball bearings evenly spaced inside the bearing races.

14. Using a small "pick" like tool, remove the bearing retainer from the bearing. Refer to Figure 4.
15. After removing the bearing retainer, reposition the ball bearings into two groups of four. Refer to Figure 5.
16. Separate the 2-legged puller from the center nut on J 44714-B, Steering Linkage and Tie Rod Puller, and insert the puller legs into the openings between the two groups of ball bearings.
17. With the forcing screw backed off, screw the center nut into the puller. **Tighten**

    Tighten the nut until it bottoms against the puller.

18. While holding the center nut with a wrench, tighten the forcing screw to remove the bearing from the housing. See Figure 7.

Important

Inspect the gear housing to ensure that all pieces of the old bearing have been removed.

19. Apply a small quantity of lubrication (e.g., multi-purpose grease or power steering fluid) inside the housing bore where the new bearing will be installed.
20. Center the new bearing over the pinion thread. The bearing can be installed with either side facing outwards.
21. Place the bearing installer (1) J 44714-2 (included in J 44714-B) over the pinion thread, refer to Figure 8. If necessary, use the extension included with the installer. Lightly tap with hammer until the bearing is seated in the housing.
22. Install a new snap ring, refer to Figure 9. When properly installed, the large lug (1) on the snap ring must be on the right side as shown.

Important

If the stub shaft is not held in the next step, damage to the pinion teeth will occur.

23. While holding the stub shaft (1), install a new retaining nut (3) on the pinion shaft, refer to Figure 10. **Tighten**

    Tighten retaining nut to 30 N·m (22 lb ft).

24. Install a new dust cap (2) to the steering gear housing.

25. Center the rack in the housing. **Tighten**

    Tighten the adjuster plug (2) to 10 N·m (88 lb in), and then back off 40 to 50 degrees (4), refer to Figure 11.

26. Check the torque on the pinion. Maximum pinion preload torque is 4 N·m (35 lb in).
27. Tighten the adjuster plug lock nut (3) firmly against the steering gear housing while holding the adjuster plug (2) stationary.
28. Install the steering gear in the engine cradle mounting brackets.
29. Install the two bolts that attach the steering gear to the engine cradle. **Tighten**

    Tighten to 80 N·m (59 lb ft).

30. Raise the rear of the engine cradle and install the rear attaching bolts. **Tighten**

    Tighten to 180 N·m (133 lb ft).

31. Connect the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

    Tighten the bolt to 48 N·m (35 lb ft).

32. Reposition the stabilizer bar.
33. Install the left and right side stabilizer bar links to the lower control arm. **Tighten**

    Tighten to 23 N·m (17 lb ft).

34. Lower the vehicle.
35. Check the power steering fluid level and add if necessary.

1997-1998 Buick Regal
1998 Oldsmobile Intrigue

Steering Gear Replacement, If Required

For additional information on steering gear removal, refer to the Steering Section in the appropriate Service Manual.

The following service procedure is based on certain steps having already been performed in the inspection procedure.

1. Remove the bolt and separate the intermediate steering shaft from the steering gear.
2. Support the rear of the engine frame (cradle) and remove the two rear attaching bolts.
3. Remove the left and right side stabilizer bar links from the lower control arms.
4. Reposition the stabilizer bar as necessary to improve access to the steering gear.
5. Remove the two bolts that attach the steering gear to the engine cradle.
6. Lower the rear of the engine cradle as necessary to access the steering gear.
7. Loosen the outer tie rod end adjuster nuts.
8. Remove both wheel and tire assemblies.
9. Remove the nuts that attach the tie rod ends to the steering knuckles.

10. Using J-24319-B (outer tie rod end puller) or equivalent, separate the tie rod ends from the knuckles.
11. Disconnect the pressure and return lines from the steering gear.
12. If equipped, disconnect the electrical connector from the steering gear.
13. Remove the steering gear from the vehicle.
14. Remove the tie rod ends from the old steering gear.
15. Measure the position of the adjuster nuts on the old steering gear and adjust the new nuts on the new steering gear to the same measurement.
16. Install the tie rod ends on the new steering gear. **Tighten**

    Tighten the adjuster nuts to 68 N·m (50 lb ft).

17. Install the new steering gear in the engine cradle mounting brackets.
18. If equipped, connect the electrical connector for the steering gear.
19. Install the two bolts that attach the steering gear to the engine cradle. **Tighten**

    Tighten to 80 N·m (59 lb ft).

20. Connect the pressure and return lines to the steering gear. **Tighten**

    Tighten to 27 N·m (20 lb ft).

21. Install the tie rod ends to the steering knuckles. Install the retaining nuts. **Tighten**

    Tighten to 30 N·m (22 lb ft), plus 120 degrees (or 2 flats of the nut).

22. Raise the rear of the engine cradle and install the two rear attaching bolts. **Tighten**

    Tighten to 180 N·m (133 lb ft).

23. Install the intermediate steering shaft to the steering gear and install the bolt. **Tighten**

    Tighten to 48 N·m (35 lb ft).

24. Reposition the stabilizer bar.
25. Install the left and right side stabilizer bar links to the lower control arms. **Tighten**

    Tighten to 23 N·m (17 lb ft).

26. Install both wheel and tire assemblies. Install lug nuts. **Tighten**

    Tighten lug nuts to 140 N·m (103 lb ft).

27. Lower the vehicle.
28. Add power steering fluid and bleed the system.
29. Check the alignment and set toe-in as necessary.

Figure 1

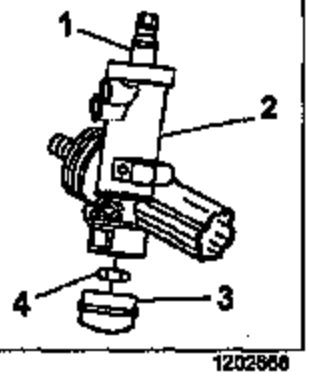

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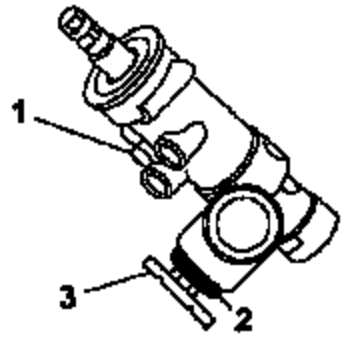
Figure 2



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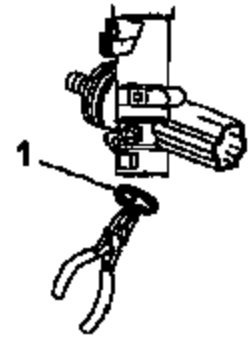

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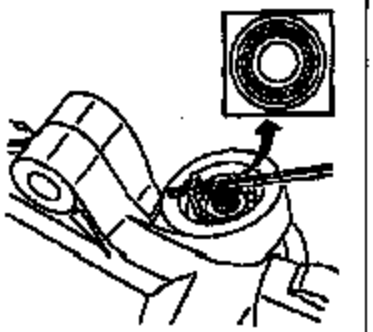

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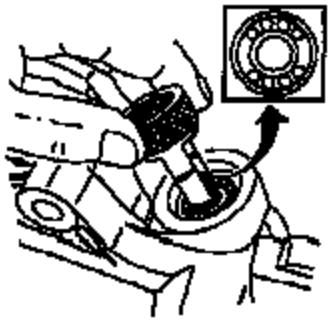

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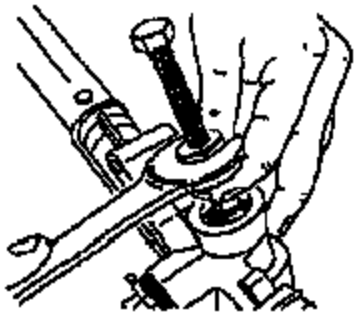

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Figure 7

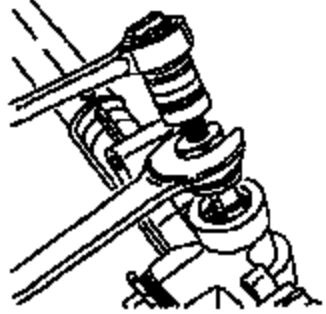

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Figure 8

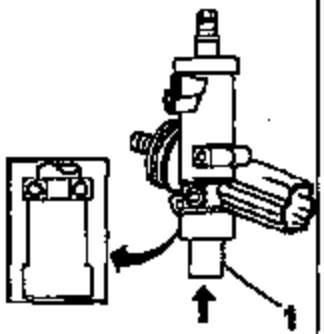

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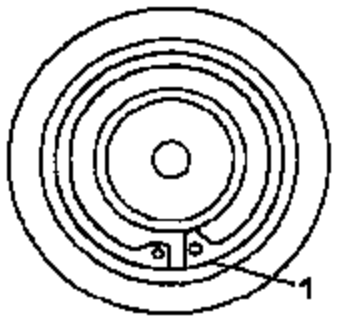
Figure 9



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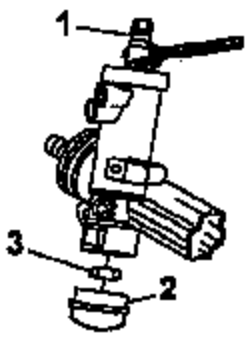

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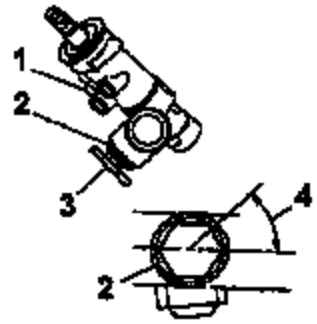

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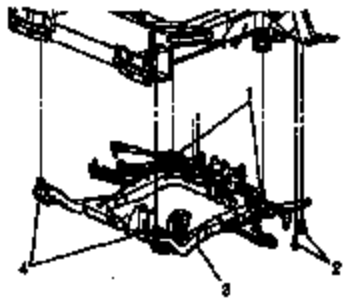
Figure 12



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CUSTOMER REIMBURSEMENT For US

All customer requests for reimbursement for previous repairs for the recall condition will be handled by the Customer Assistance Center, not by dealers.

A General Motors Product Recall Customer Reimbursement Procedure Form is included with the customer letter.

IMPORTANT: Refer to the GM Service Policies and Procedures Manual, section 6.1.12, for specific procedures regarding customer reimbursement and the form.

CUSTOMER REIMBURSEMENT For Canada

Customer requests for reimbursement of previously paid repairs to correct the condition addressed in this bulletin are to be submitted by February 28, 2005.

All reasonable customer paid receipts should be considered for reimbursement. The amount to be reimbursed will be limited to the amount the repair would have cost if completed by an authorized General Motors dealer.

When a customer requests reimbursement, they must provide the following:

- Proof of ownership at time of repair.
- Original paid receipt confirming the amount of repair expense(s) that were not reimbursed, a description of the repair, and the person or entity performing the repair.

Claims for customer reimbursement on previously paid repairs are to be submitted as required by WINS.

IMPORTANT: Refer to the GM Service Policies and Procedures Manual, section 1.6.2, for specific procedures regarding customer reimbursement verification.

CLAIM INFORMATION

Submit a Product Recall Claim with the information indicated below:

REPAIR PERFORMED	PART COUNT	PART NO.	PARTS ALLOW	CC-FC	LABOR OP	LABOR HOURS	NET ITEM
Inspect Steering Gear, Non-GM Design – No Action Required	N/A	N/A	N/A	MA-96	V1073	0.2*	N/A
Inspect & Replace Lower Pinion Bearing (Inc. Setting Toe-In) • All Model Years of Regal, Lumina, Monte Carlo, Cutlass Supreme, Intrigue, Grand Prix	1	—	**	MA-96	V1074	* 1.8	***
• 1997-98 Cutlass, Malibu						2.2	
Inspect Lower Pinion Bearing & Replace Steering Gear (Inc. Setting Toe-In) • 1996 Regal and Grand Prix • 1996-97 Cutlass Supreme • 1997-98, Lumina, Monte Carlo	1	—	****	MA-96	V1075	* 2.0	***
• 1997-98 Regal • 1998 Intrigue						2.3	
• 1997-98 Cutlass, Malibu						2.1	
Customer Reimbursement (Canadian Dealers ONLY) (The Recall Must Still Be Performed on the Vehicle)	N/A	N/A	N/A	MA-96	V1107	0.2	*****
Courtesy Transportation	N/A	N/A	N/A	MA-96	******	N/A	******

* For Program Administrative Allowance, add 0.1 hours to the "Labor Hours".

** The "Parts Allowance" should be the sum total of the current GMSPO Dealer net price plus applicable Mark-Up or Landed Cost Mark-Up (for IPC) for lower pinion bearing needed to complete the repair.

*** The amount identified in the "Net Item" column should represent the sum total of the current GMSPO Dealer net price plus applicable Mark-Up or Landed Cost Mark-Up (for IPC) for the actual cost of the power steering fluid needed to perform the required repairs.

**** The "Parts Allowance" should be the sum total of the current GMSPO Dealer net price plus applicable Mark-Up or Landed Cost Mark-Up (for IPC) for the steering gear needed to complete the repair

***** The amount identified in the "Net Item" column should represent the dollar amount reimbursed to the customer.

****** Submit courtesy transportation using normal labor operations for courtesy transportation as indicated in the GM Service Policies and Procedures Manual. The amount identified

In the "Net Item" column should represent the dollar amount reimbursed to the customer.

Refer to the General Motors WINS Claims Processing Manual for details on Product Recall Claim Submission.

CUSTOMER NOTIFICATION – For US and CANADA

General Motors will notify customers of this recall on their vehicle (see copy of customer letter included with this bulletin).

CUSTOMER NOTIFICATION – For IPC

Letters will be sent to known owners of record located within areas covered by the US National Traffic and Motor Vehicle Safety Act. For owners outside these areas, dealers should notify customers using the attached sample letter.

DEALER RECALL RESPONSIBILITY – For US and IPC (US States, Territories, and Possessions)

The US National Traffic and Motor Vehicle Safety Act provides that each vehicle that is subject to a recall of this type must be adequately repaired within a reasonable time after the customer has tendered it for repair. A failure to repair within sixty days after tender of a vehicle is prima facie evidence of failure to repair within a reasonable time. If the condition is not adequately repaired within a reasonable time, the customer may be entitled to an identical or reasonably equivalent vehicle at no charge or to a refund of the purchase price less a reasonable allowance for depreciation. To avoid having to provide these burdensome remedies, every effort must be made to promptly schedule an appointment with each customer and to repair their vehicle as soon as possible. In the recall notification letters, customers are told how to contact the US National Highway Traffic Safety Administration if the recall is not completed within a reasonable time.

DEALER RECALL RESPONSIBILITY - ALL

All unsold new vehicles in dealers' possession and subject to this recall must be held and inspected/repaired per the service procedure of this recall bulletin before customers take possession of these vehicles.

Dealers are to service all vehicles subject to this recall at no charge to customers, regardless of mileage, age of vehicle, or ownership, from this time forward.

Customers who have recently purchased vehicles sold from your vehicle inventory, and for which there is no customer information indicated on the dealer listing, are to be contacted by the dealer. Arrangements are to be made to make the required correction according to the instructions contained in this bulletin. A copy of the customer letter is provided in this bulletin for your use in contacting customers. Recall follow-up cards should not be used for this purpose, since the customer may not as yet have received the notification letter.

In summary, whenever a vehicle subject to this recall enters your vehicle inventory, or is in your dealership for service in the future, you must take the steps necessary to be sure the recall correction has been made before selling or releasing the vehicle.

03062-S

February 2004

Dear General Motors Customer:

This notice is sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Federal regulation requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten days.

Reason For This Recall: General Motors has decided that a defect, which relates to motor vehicle safety, exists in certain 1996, 1997, and 1998 model year Buick Regal; 1997 and 1998 model year Chevrolet Lumina, Malibu, and Monte Carlo; 1997 and 1998 model year Oldsmobile Cutlass; 1996 and 1997 model year Oldsmobile Cutlass Supreme; 1998 model year Oldsmobile Intrigue; and 1996 model year Pontiac Grand Prix vehicles. Some of these vehicles have a condition where the lower pinion bearing in the power steering gear may separate. Most reports indicate the driver experienced an intermittent loss of power steering assist when making left turns, usually at low speeds. Power assist is normal in right hand turns. When trying to turn left, some drivers could experience higher resistance or, in a few cases, assist towards the right. If this happens while the vehicle is moving, a crash could result.

What Will Be Done: Your GM dealer will inspect the condition of the lower pinion bearing and replace the lower pinion bearing, or in a few cases, replace the rack and pinion steering gear assembly. This service will be performed for you at **no charge.**

How Long Will The Repair Take? This inspection and service correction will take approximately 2 to 2½ hours. However, due to service scheduling requirements, your dealer may need your vehicle for a longer period of time.

Contacting Your Dealer: To limit any possible inconvenience, we recommend that you contact your GM dealer as soon as possible to schedule an appointment for this repair. By scheduling an appointment, your dealer can ensure that the necessary parts will be available on your scheduled appointment date. Should your dealer be unable to schedule a service date within a reasonable time, you should contact the appropriate Customer Assistance Center at the listed number below:

Division	Number	Text Telephones (TTY)
Buick	1-866-608-8080	1-800-832-8425
Chevrolet	1-800-630-2438	1-800-833-2438
Pontiac	1-800-620-7668	1-800-833-7668
Oldsmobile	1-800-630-6537	1-800-833-6537
Puerto Rico – English	1-800-496-9992	
Puerto Rico – Español	1-800-496-9993	
Virgin Islands	1-800-496-9994	

If, after contacting the appropriate Customer Assistance Center, you are still not satisfied that we have done our best to remedy this condition without charge and within a reasonable time, you may wish to write the Administrator, National Highway Traffic Safety Administration, 400 Seventh Street, SW, Washington, DC 20590 or call 1-888-327-4236.

Customer Reply Card: The attached customer reply card identifies your vehicle. Presentation of this card to your dealer will assist in making the necessary correction in the shortest possible time. If you no longer own this vehicle, please let us know by completing the attached and mailing it in the postage paid envelope.

Customer Reimbursement: The enclosed form explains what reimbursement is available and how to request reimbursement if you have paid for repairs for the recall condition.

Recall Information Online: More information about this recall (including frequently asked questions) is available online at the Owner Center at My GMLink. This free online service offers vehicle and ownership-related information and tools tailored to your specific vehicle. To join, visit www.mygmlink.com and enter your Vehicle Identification Number (VIN) included with this letter to get the most personalized information for your vehicle.

We are sorry to cause you this inconvenience; however, we have taken this action in the interest of your safety and continued satisfaction with our products.

General Motors Corporation

Enclosure